REMARKS

1. Introduction

In the final Office Action mailed October 9, 2009, the Examiner rejected claims 1, 3, 5, 7, and 27 under 35 U.S.C. § 103(a) as being unpatentable over Chou et al., U.S. Pub. No. 2002/0042027 ("Chou") in view of Shaper, U.S. Pub. No. 2006/0035164 ("Schaper").

The Examiner rejected claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Chou and Schaper in view of DePuydt et al., U.S. Patent No. 6,030,556 ("DePuydt").

The Examiner rejected claim 6 under 35 U.S.C. § 103(a) as being unpatentable over Chou and Schaper in view of Chou, U.S. Patent No. 5,772,905 ("Chou '905").

The Examiner rejected claim 8 under 35 U.S.C. § 103(a) as being unpatentable over Chou and Schaper in view of Kub et al., U.S. Patent No. 6,323,108 ("Kub").

The Examiner also objected to claims 4 and 8 based on informalities, i.e., based on their reference to cancelled claim 2.

In response, Applicant has amended claims 4 and 8 to recite their dependency on claim 1. Claims 1, 3-8, and 27 are currently pending.

Applicant respectfully requests reconsideration and allowance of the claims, as amended herein, for the reasons set forth below.

2. Response to the claim rejections

Claim 1 is directed to a template formed from a layered structure comprising a substrate, a single-phase polymer layer positioned on the substrate, and a semiconductor

or metal layer positioned on the polymer layer. Further, claim 1 specifies that the polymer layer comprises a textured surface, "the texturing being caused by induction of stress in the polymer layer ***with the semiconductor or metal layer present***." Thus, the semiconductor or metal layer is positioned on the polymer layer during its texturing.

In rejecting claim 1, the Examiner alleged that "[t]he stress induced by Chou occurs with the semiconductor layer present." *See* Final Office Action, p. 3. However, it appears that the "semiconductor layer" that the Examiner is referring to is actually the ***substrate*** (a silicon wafer being used as substrate 31) on which PMMA film 33 (the "polymer layer" in the Examiner's rationale) is formed. In contrast, the "semiconductor or metal layer" recited in claim 1 is not the substrate but, rather, is "positioned ***on*** the polymer layer."

Thus, the real issue is not whether Chou teaches a "semiconductor layer," but whether Chou teaches "a semiconductor or metal layer positioned ***on*** the polymer layer" during the texturing of the polymer layer, as recited in claim 1. Clearly, Chou does not. Instead, Chou teaches that PMMA film 33 is patterned by using a mask 35 that is placed a certain distance ***above*** the film, rather than ***on*** the film:

> It was observed that without a mask placed on the top, after a heat-cool cycle, the PMMA film 33 remains flat and featureless. But, ***with a mask 35 placed a certain distance above the surface of the PMMA film 33***, after the same heat-cool cycle, the initially flat PMMA film 33 became self-assembled into periodic supramolecular pillars 49 shown in FIG. 1.

See paragraph 37 (emphasis added). For example, Chou teaches that the separation between mask 35 and PMMA film 33 is preferably in the range of about 10 nm to about 1000 nm. *See* paragraph 35.

Moreover, Chou teaches that the open space between PMMA film 33 and mask 35 is what enables the texturing of the film:

> The open space between the initial PMMA film 33 and the mask 35 gives the PMMA film 33 freedom to deform three-dimensionally.

See paragraph 36. By teaching the necessity of an ***open space*** between the PMMA film being textured and the mask, Chou teaches away from "a semiconductor or metal layer positioned ***on*** the polymer layer" during the texturing of the polymer layer, as recited in claim 1.

The Examiner has now admitted that Chou does not teach the structure recited in claim 1, noting that "Chou does not teach the use of an additional layer such that there are three layers consisting of a substrate, a semiconductor layer, and a patterned polymer layer." *See* Final Office Action, p. 3. However, not only does Chou fail to teach the use of an additional layer, Chou teaches away from any modification in which an additional layer is positioned ***on*** the polymer layer (PMMA film 33) during its texturing. As noted above, Chou teaches that the open space above the film is what gives the film the freedom to deform three-dimensionally. *See* paragraph 36. Thus, if mask 35 were to be placed directly on PMMA film 33 during Chou's heat-cool cycle, i.e., with no separation or open space between them, then PMMA film 33 would not have the freedom to deform three-dimensionally and the intended texturing would not occur. In other words, modifying Chou to use a "semiconductor or metal layer positioned on the polymer layer," as recited in claim 1, would render Chou unsatisfactory for its intended purpose. For this reason alone, the Examiner's obviousness rejection of claim 1 is clearly erroneous and should be withdrawn. *See* MPEP 2143.01(V).

In addition, to try to make up for the deficiencies in Chou, the Examiner relied on Schaper. Specifically, the Examiner alleged that Schaper discloses a template comprising a patterned polymer sheet formed from a PVA polymer and a metal layer positioned on the polymer layer. The Examiner further alleged that it would have been obvious to add Schaper's metal layer to Chou's supposed "template." *See* Final Office Action, p. 3.

However, the Supreme Court has made clear that "rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR Int'l Co. v. Teleflex, Inc.*, 82 USPQ2d 1385, 1396 (S. Ct. 2007), quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). The Examiner has argued that one having ordinary skill in the art would have been motivated to modify Chou to add Schaper's metal layer "by a desire to provide a coating for further development of the template." *See* Final Office Action, p. 3. But this conclusory assertion does not provide any rationale for why a person of ordinary skill would have textured the polymer layer "with the ... metal layer present," as recited in claim 1. To the contrary, Schaper teaches that the metal layer is formed on the PVA film ***after*** it has been patterned. *See* paragraph 90 and Fig. 13a. Because the Examiner has provided no reason why a person of ordinary skill in the art would have combined the teachings of Chou and Schaper to use a semiconductor or metal layer positioned on the polymer layer during its texturing, as recited in claim 1, the Examiner's obviousness rejection cannot be sustained.

Finally, as noted above, Chou taught away from an additional layer (e.g., Schaper's metal layer) positioned on the polymer layer during its texturing because Chou's texturing required an open space above the polymer layer to give it freedom to

deform three-dimensionally. Thus, Chou and Schaper cannot be combined as the Examiner has alleged. *See* MPEP § 2145 ("It is improper to combine references where the references teach away from their combination."). For this reason also, the Examiner's rejection is clearly erroneous and should be withdrawn.

Accordingly, Applicant submits that claim 1 is allowable over Chou for at least the foregoing reasons. Applicant further submits that claims 3-8 and 27 are allowable for at least the reason that they depend from an allowable claim.

3. Conclusion

Applicant submits that the present application is in condition for allowance, and notice to that effect is hereby requested. Should the Examiner feel that further dialog would advance the subject application to issuance, the Examiner is invited to telephone the undersigned at any time at (312) 913-0001.

Respectfully submitted,

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